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How Creatine Protects Your Cardiovascular Health

Analysis by Dr. Joseph Mercola | April 29, 2025

STORY AT-A-GLANCE

- Creatine made arteries more flexible in older adults after just four weeks, improving blood flow and heart health without any exercise or diet changes
- After 28 days of taking creatine, high blood sugar levels dropped to healthier ranges and harmful blood fats decreased significantly
- Creatine helps blood vessels work better by providing energy to cells and supporting the production of nitric oxide that keeps arteries healthy
- In just one week, arteries became less stiff with creatine use, and blood pressure began showing signs of improvement
- People who don't eat meat may need creatine supplements since animal foods are the main dietary source, and your body makes only about 1 to 2 grams per day

One of the most overlooked drivers of cardiovascular risk is vascular aging — where your arteries become stiff, inflamed and less responsive over time. This process begins earlier than you might think and can progress silently for years before showing up as a heart attack, stroke or metabolic disease.

Vascular aging is marked by a loss of elasticity in your blood vessels, elevated oxidative stress and declining endothelial function — the inner lining of your arteries that controls how well they expand and contract. When that function drops, blood flow suffers. You get less oxygen to your tissues and your risk of cardiovascular disease, dementia and Type 2 diabetes increases dramatically.

Creatine isn't the first thing that comes to mind when you're thinking about vascular health. It's usually associated with gym routines or athletic performance. But your body actually makes about 1 to 2 grams of creatine a day from amino acids — and this compound plays a central role in maintaining your cellular energy.

Creatine acts like a rechargeable battery for your cells, helping to rapidly regenerate adenosine triphosphate (ATP), your body's energy currency, especially in high-demand areas like muscles, nerves and blood vessels. The real breakthrough? Research shows creatine isn't just for muscles — it also helps your blood vessels work better, keeps them flexible and improves how well oxygen reaches your tissues.

This matters if you're over 50 or have blood sugar or weight issues, because stiff or weak blood vessels raise your risk for heart problems. Here's what the latest research found about how creatine improved artery health and metabolism in older adults.

Creatine Helped Older Adults Improve Blood Flow in Just Four Weeks

A study in the journal Nutrients looked at how **creatine** affects the blood vessels of older adults who aren't very active.[1] For four weeks, participants took creatine every day. Then, after a short break, they switched to a placebo so researchers could compare the results.

- **Creatine helped make arteries more flexible —** After four weeks of creatine use, their arteries worked better. Specifically, their endothelial function improved, meaning their blood vessels could relax and open more easily during blood flow.

  After taking creatine, flow-mediated dilation (FMD), which measures how much arteries expand when blood flow increases, improved from 7.68% to 8.9%. That sounds small, but even a 1% increase in FMD is linked to a 13% lower risk of heart problems.

- **Oxygen delivery through small blood vessels improved too —** In smaller vessels, oxygen delivery to tissues also got a big boost. This matters because better oxygen flow helps your muscles, brain and organs recover, heal and perform more efficiently.
- **Creatine lowered fasting blood sugar and triglycerides —** After 28 days, the participants' blood sugar dropped from prediabetic levels to a healthier range. Their triglycerides, which are fats in the blood linked to heart disease, also went down significantly. These changes happened without any other lifestyle changes — just from adding creatine.

Creatine's Benefits Came from Real Biological Changes

Your body uses the amino acid arginine to make creatine — but it also uses arginine to produce nitric oxide (NO), a gas that helps relax and open your blood vessels. When you get creatine from supplements, your body doesn't need to use as much arginine to make it. That means more arginine is available to support healthy blood flow.

- **Energy delivery improved in the arteries —** ATP is the main energy source for your cells. Creatine helps move ATP to the cells that need it most — especially muscle and blood vessel cells. When your arteries have enough energy, they stay flexible and responsive, which helps keep your circulation in balance.
- **In small vessels, creatine supported potassium pumps that control flow —** Small blood vessels don't rely as much on nitric oxide. Instead, they depend on potassium ion pumps that need steady energy to work. These pumps open and close to regulate blood flow. Creatine helps power these pumps by supporting ATP levels, which helps explain why oxygen delivery improved so much.
- **None of these effects happened with the placebo —** The placebo group didn't see any change in artery flexibility, oxygen flow, blood sugar or triglycerides. That shows it was the creatine — not just the routine of taking something daily — that made the

difference. No side effects were reported, and blood pressure, hydration and kidney markers stayed stable throughout the study.

Creatine Made Arteries More Flexible in Just One Week

Adding support to creatine's benefits, research published in Clinical Nutrition ESPEN looked at whether creatine could improve heart and blood vessel health in older men in just seven days.[2] Unlike most studies that take weeks or months, this one tested short-term effects. The goal was to see if even a quick creatine boost could make a difference.

- **Artery stiffness dropped in just seven days with creatine —** The group taking creatine saw a drop in a test measuring how stiff or flexible your arteries are. It went from 8.7 to 8.2 — a meaningful improvement.
- **Blood pressure started to trend lower, too —** Although not statistically significant yet, systolic blood pressure (the top number) fell from 144 to 136.1 mmHg. That's an eight-point drop in one week. If the trend continues, it could mean a lower risk of heart problems with ongoing use.
- **Heart stress didn't increase, which makes creatine a safe option —** Unlike some interventions that rev up the heart, creatine didn't change how hard the heart had to pump. That's a key point for anyone managing early signs of cardiovascular problems. You want support without overstimulation, and creatine fits that profile.

How to Increase Your Creatine Intake and Support Vascular Health

If you're looking to protect your heart as you age, adding creatine to your routine could be a smart move. But before you jump to supplements, it's important to understand how to do this safely and in a way that supports your long-term health. I recommend starting with food first, then using supplements to fine-tune your levels if needed.

Your arteries and vascular system thrive when they're well-fed with nutrients that support cellular energy. Creatine is one of the most effective nutrients for this job. Below, I've outlined five steps you can take to improve your creatine intake and support your cardiovascular system from the inside out.

1. **Start with real food sources of creatine —** Your body naturally makes some creatine on its own but not enough to meet higher demands — especially as you age. The most efficient way to get more creatine is by eating animal-based foods like grass fed beef. Avoid conventionally raised pork and chicken, as they're loaded with linoleic acid (LA), which disrupts your cellular energy production and cancels out the benefits of creatine.

2. **Consider supplements if you're vegetarian or vegan —** If you're following a vegetarian or vegan diet, you're not getting creatine from your food, as it doesn't exist in plants. That means you're relying entirely on what your body can make, and that might not be enough to support your vascular health. If you don't consume animal-based foods, it would be wise to reevaluate your dietary approach or consider targeted supplementation.

3. **Use creatine monohydrate if you need a supplement —** If you're not able to get enough creatine from food, or you're aiming to reach the recommended daily dose of 3 to 5 grams per day, I recommend creatine monohydrate. It's the most studied and safest form. Choose a clean product from a trusted company — no additives, fillers or mystery flavors.

4. **Stick with the proven dose to avoid side effects —** More isn't better when it comes to creatine. The sweet spot for most adults is 3 to 5 grams per day. Go higher than that — especially up to 10 or 20 grams — and you're more likely to deal with bloating, water retention or loose stools.

5. **Support creatine's effects by reducing LA in your diet —** If your diet is high in LA — found in vegetable oils like soybean oil, corn oil and safflower oil — your cells can't produce energy efficiently. That's why I advise removing these unhealthy fats from your diet. Switch to tallow, ghee or grass fed butter. Cut out packaged snacks, fried

foods and most restaurant meals unless you know exactly how they're prepared. Your arteries will thank you.

Making these changes isn't about perfection. It's about giving your cells what they need to function at their best. Start where you are, make one upgrade at a time and pay attention to how your body responds. That's how you take control of your vascular health — without waiting for symptoms to show up.

FAQs About Creatine

Q: What does creatine do for your heart and blood vessels?

A: Creatine improves how well your arteries expand and contract, which boosts blood flow and reduces the workload on your heart. It also enhances oxygen delivery to your tissues and supports better circulation overall.

Q: How quickly does creatine improve vascular health?

A: Improvements have been seen in as little as seven days. One study found creatine made arteries less stiff in just seven days, while another saw better artery flexibility and oxygen flow after four weeks of daily use.

Q: Can creatine help with blood sugar or triglycerides?

A: Yes. In one study, fasting glucose dropped from prediabetic to normal levels, and triglycerides significantly decreased, both of which are key risk factors for heart disease.

Q: Does creatine help even if you don't exercise?

A: Yes. One study focused on older adults who were mostly sedentary, and they still saw improvements in blood flow, artery flexibility and metabolic markers like blood sugar and triglycerides. This shows creatine supports vascular health even without changes to your workout routine.

Q: What's the best way to add creatine to your routine?

A: Start with whole food sources like grass fed beef. If needed, supplement with creatine monohydrate — choose a clean product without fillers.

Sources and References

- [1] Nutrients. 2024 Dec 27;17(1):58
- [2] Clin Nutr ESPEN. 2024 Oct:63:557-563